REMARKS

Consistent with applicants' objective of improving "accuracy in controlling the temperature of the solutions" in the wells (see paragraph [0009] of applicants' specification, the present invention includes a "first temperature controller" which includes a thermal sensor which directly measures "the temperature of said solutions filling said pair of wells and said flow path." See, for example, the first seven lines of [0058] and the first two lines of [0059]. Accordingly, claims 1 and 4 have been amended by insertion of the word "directly."

The rejection of claims 1-4 for obviousness over Kanegasaki in view of Ho is respectfully traversed. The Examiner acknowledges that Kanegasaki does not disclose the first and second temperature controllers recited by the pending claims. However, the Examiner interprets Ho as disclosing applicants' first and second temperature controllers and maintains that it would have been obvious to incorporate those temperature controllers of Ho into the structure of Kanegasaki. The rejection is traversed both for the reason that Ho does not disclose applicants' first and second temperature controllers and for the reason that there is no reason why one skilled in the art would have incorporated certain structure of Ho, relied upon by the Examiner, into that of Kanegasaki.

Ho discloses three heating sections. One heating section includes a heating resistor 242 embedded in a "heating wall" 24. While the undersigned finds Ho somewhat difficult to read, it appears that the heating wall 24, in cooperation with the "thermal preservative wall 26 serves "to keep the culturing chamber steady warm," quoting from column 2, lines 40-42. In a second heating section a "temperature controller (f) activates a preheating moistening machine (g) to adjust the mixed air to a desired temperature and a desired humidity to reduce deviation impact before sending to the culturing chamber," quoting from column 3, lines 49-55. A third heating section, apparently not relevant here, includes an annular heating resistor 36 "sandwiched between the two layers of glass to provide heat and avoid misting on the glass," quoting from column 2, lines 53-58. At column 3, lines 4-7, Ho teaches that the heating resistor 36 and "a thermal sensor (not shown)" are both connected to a circuit board attached to the lid 30, but the circuit board and the thermal sensor associated with the heating

resistor 36 are merely described as attached to the lid and neither is shown in the drawings. The signal from the thermal sensor 244 embedded in the "heating wall" 24 is apparently used to control both the thermal sensor 244, also embedded in the "heating wall" 24 (see column 2, lines 34-40), and the "preheating moistening machine (g)" through the temperature controller (f)(see column 3, lines 49-55 and Figure 5).

Kanegasaki as Modified by Ho Would Not Have Applicants' First Temperature Controller

Applicants' claims define the first temperature controller as having a part of a temperature sensor immersed in solution within the cell observation chamber. In contrast Kanegasaki as modified by Ho would have a temperature sensor (Ho's thermal sensor 244) embedded in the same "heating wall 24" as a heating resistor 242. The thermal sensor 244 of Ho is characterized as measuring the temperature of the "culturing chamber" (column 3, lines 49-55), not the temperature of any solution contained therein, and certainly does not directly measure the temperature of any solution. The Examiner acknowledges that further modification of the combination of Kanegasaki and Ho would be necessary to arrive at the claimed structure and writes, at the top of page 6 of the office action:

> "It would have been obvious to one of ordinary skill in the art at the time of the invention to place the sensor in the liquid reservoir, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70."

It is respectfully submitted that the allegedly obvious modification is more than "a mere rearranging of parts" in that it would move a temperature sensor from embedded within a solid wall into a solution, a radical change in environment. Further, guidelines for rejections under 35 UCS 103 mandated by more recent case law do not support the notion that any and all rearrangement of parts must be regarded as *prima facie* obvious.

The annular heating resistor 36, as noted above serves merely to prevent "misting between two layers of glass and does not serve to control the temperature of any solution. Further no temperature sensor in association with heating resistor 36 is disclosed and, if it existed, there would be no reason for it to be immersed in any

solution.

Claim 4 defines the temperature sensor of the first temperature controller in terms further removed from anything suggested by a combination of Kanegasaki and Ho. Neither Kanegasaki nor Ho discloses or suggests a "liquid storage chamber" within the cell observation chamber which is separated from but connected to the solutions in the wells and flow path connecting the wells. See lines 4-10 of paragraph [0060] of applicants' specification.

There is No Reason Why One Skilled in the Art Would have Modified Kanegasaki to Include The Temperature Controller (f) and Preheating Moistening Machine (g) of Ho

Kanegasaki is directed to measurement of chemotaxis, as is the presently claimed invention, whereas Ho is directed to a "culturing chamber". Culturing as described in Ho requires supply of air to culture, whereas the measurement of chemotaxis in Kanegasaki has no use for a supply of air to the solution/solutions within the cell observation chamber. It necessarily follows that modification of Kanegasaki to include the temperature controller (f) and preheating moistening machine (g) (the **only external heater** disclosed by Ho) to Kanegasaki would serve no useful purpose. The purpose of the temperature controller (f) and preheating moistening machine (g) taught by Ho at column 3, lines 49-55 is "to adjust the mixed air to a desired temperature and a desired humidity to reduce deviation impact before sending to the culturing chamber." Again, Kanegasaki has no use for a supply of air, adjusted for temperature and humidity, or otherwise.

Kanegasaki as Modified by Ho Would Not Have Applicants' Second Temperature Controller

Even if there was reason to modify Kanegasaki to include elements (f) and (g) of Ho, Kanegasaki as modified by Ho would not have applicants' second temperature controller. Claims 1-3 and 5 define the claimed apparatus as including a second temperature controller "for measuring the temperature of a heating section external to the cell observation chamber." Again, the only external heating source in Kanegasaki as modified by Ho would be the preheating/moistening machine (g) of Ho. Whereas

claims 1-3 and 5 here define the second temperature controller as "measuring the temperature of a heating section external to the cell observation chamber" to prevent it from overheating, as taught in paragraph [0058] of applicants' specification and recited in claim 3, the temperature controller (f) of Ho is responsive to the temperature of the culturing chamber as monitored by the thermal sensor 244. See column 3, lines 49-55.

In conclusion, it is respectfully requested that the Examiner reconsider and withdraw the rejection in view of the present amendments and foregoing remarks.

Respectfully submitted,
Bacon & Thomas, PLLC

George A. Loud
Reg. No. 25,814

September 9, 2009

Bacon & Thomas, PLLC
625 Slaters Lane, 4th Floor
Alexandria, VA 22314
703 683-0500